REMARKS

Claims 1-7 are pending in the application. Applicants amend claims 1 and 3-4 for further clarification. No new matter has been added.

Applicant, again, acknowledges with appreciation the Examiner's allowance of claims 5-6.

Claims 1, 2, and 7 stand rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent Application Publication No. 2004/0071148 to Ozaki et al.; and claims 3-4 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Ozaki et al. in view of U.S. Patent Application Publication No. 2005/0100008 to Miyata et al. Applicant amends claim 1 in a good faith effort to clarify the invention as distinguished from the cited references, and respectfully traverses the rejections.

Ozaki et al. describe a translation table 400, as illustrated in Fig. 5 thereof, and how the address translation table correlates the IPv6 address with a network identifier portion, as shown in Fig. 9 and described in paragraph [0008], lines 17-21. But the address translation table 400 is made up of one or more translation records 410, each of which is constituted of a local address 411 of a non-IP device 100 and an IPv6 address 412 allocated to the non-IP device 100.

Accordingly, the address translation table 400 is used for converting between a network identifier which is a local address of a non-IP device and a generated IPv6 address, but does not include relation between IPv6 address and information on an output port transmitting a received packet having the IPv6 address as destination address. That is, the translation table 400 is different from a routing table and is only a conversion table for protocol conversion.

Ozaki et al. describe a flowchart for transmitting data from a non-IP device 100 to an IP device (such as a cell-phone 130 or a laptop 140) via IPv6 router in Fig. 9, and step 562 in Fig. 11 shows the process of acquiring a destination address.

As illustrated in Figs. 9 and 11, the gateway sets the IPv6 address 452 of the local data packet read in step 561 in the IPv6 header 461 of the IPv6 data packet 460 as a destination (step 562). That is, the IPv6 address 452 is set in the local data packet and is not converted from the local data packet using a translation table.

Accordingly, the translation table is not used in routing a packet from the non-IP device 100 to an IP device.

Ozaki et al., as cited and relied upon by the Examiner, do not disclose the gateway controlling a correspondence relationship between the generated IPv6 address and an output route because the translation table is different from a routing table, and is not used in routing packets from the non-IP device 100 to an IP device.

Accordingly, Ozaki et al., as cited and relied upon by the Examiner fail to disclose,

> "a routing table for storing each position identifier portion and information on an output route for the position identifier portion, said routing table being referred to for routing a received IP packet from an IP network to an output route on an output port to which is connected an IP network and the received IP packet is transmitted corresponding to a destination position identifier portion of said received IP packet," as recited in claim 1. (Emphasis added)

Ozaki et al. describe a combination of an IP address and a port number being used as an identifier for each of a plurality of ports connected to a network in paragraph [0003], lines 1-4. Ozaki et al. also describe the gateway assigning a unique IP address to non-IP device in

paragraph [0005], lines 1-8. And Ozaki et al. describe the gateway device having a network ID acquisition unit for acquiring the network ID of the IP network in paragraph [0008], lines 11-13.

But the gateway assigns a unique IP address to a non-IP device and acquires the network ID of the IP network, and it does not determine whether an IP network is assigned.

Ozaki et al., again, describe a translation table 400 used for uniquely associating a device address to a network ID in Fig. 5, paragraph [0043], lines 5-12.

The device address is an address of a non-IP device, but is not an address of an IP device. The translation table 400 is needed for protocol conversion in network system comprising of a non-IP network and an IP network. But protocol conversion is not needed in an IP network system comprising of only an IP network. Thus, Ozaki et al., as cited and relied upon by the Examiner, fail to disclose the claimed IP-to-IP routing features, as it only describes a translation table for protocol translation.

Ozaki et al. describe a gateway not only supporting a non-IP device 100 on a non-IP network, but also an IP device 150 on an IPv6 network 230 in Fig. 1. And the gateway device can assign a unique IP address to a non-IP device, as described in paragraph [0005] thereof.

But the gateway does not automatically assign a unique IP address to an IP device. Thus, although Ozaki et al. describe the gateway "supporting" both IP and non-IP networks, Ozaki et al. as cited and relied upon by the Examiner, fail to disclose

> "a determining unit for determining for each of a plurality of ports of said router whether a position identifier portion is assigned to an IP network to which the port is connected," as recited in claim 1. (Emphasis added)

Ozaki et al. describe that the gateway assigns unique IP address to each device connected to a non-IP network. But Ozaki et al. fail to disclose the gateway assigning a unique IP address

to each device connected to an IP network. Ozaki et al. describe the gateway searching the translation table 400 for all the entries registered in the table to either find a match or determine if there is no match. The gateway searches the translation table 400 when the gateway examines whether or not the translation record 410 having the same address 412 as the IPv6 address specified by target address of a NS packet is present in the translation table 400 (step 532), as described in paragraph [0050], lines 7-11.

The gateway does not, however, search the translation table 400 when IPv6 address is assigned to the non-IP device because the gateway generates an IPv6 address on the basis of the interface ID 702 of the registration data 700 received in the step 501, or the network ID acquired in the step 503, or the network ID previously acquired and held in the main memory 112, as described in paragraph [0046], lines 12-16.

The claimed position identifier portion generating unit searches all entries in a routing table when a position identifier portion is automatically generated.

Further, the gateway described in Ozaki et al. generates an IPv6 address using the interface ID 702 of the non-IP device and the network ID of the IP device, but does not generate an IPv6 address using only network IDs without using an interface ID.

The translation table 400 shows a correspondence between a local address 411 and an IPv6 address 412, such that when a new non-IP device is attached to a port of the gateway, a new entry will have to be made in the translation table 400 to associate the local address of the device with a newly-generated IPv6 address for the device.

And the translation table 400 is not used when an IPv6 address for the non-IP device is generated because an IPv6 address is generated by a local address and a network ID, and is used only when an IPv6 address is converted to a local address in a neighbor discovery protocol.

Further, Ozaki et al. fail to disclose automatically generating an IPv6 address for an IP device or IP network.

Accordingly, Ozaki et al. fail to disclose,

> "a position identifier portion generating unit for using only all of said position identifier portions registered in said routing table without using information on the port and information on an apparatus connected to the port and newly-generating a position identifier portion different from all of the position identifier portions registered in said routing table for the port when said determining unit determines that the position identifier portion is not assigned to the port," as recited in claim 3. (Emphasis added)

In other words, Ozaki et al., as cited and relied upon by the Examiner, fail to disclose,

> "[a] router for automatically generating an IP address comprising a position identifier portion and an interface identifier portion, said router comprising:
>
> a routing table for storing each position identifier portion and information on an output route for the position identifier portion, said routing table being referred to for routing a received IP packet from an IP network to an output route on an output port to which is connected to an IP network and the received IP packet is transmitted corresponding to a destination position identifier portion of said received IP packet;
>
> a determining unit for determining for each of a plurality of ports of said router whether a position identifier portion is assigned to an IP network to which the port is connected;
>
> a position identifier portion generating unit for using only all of said position identifier portions registered in said routing table without using an information on the port and an information on an apparatus connected to the port and newly-generating a position identifier portion different from all of the position identifier portions registered in said routing table for the port when said determining unit determines that the position identifier portion is not assigned to the port;

> a routing unit for receiving routing information including a position identifier portion according to a dynamic routing protocol and registering the routing information in said routing table, and registering routing information including the position identifier portion generated by said position identifier portion generating unit in said routing table and notifying another router of the routing information; and
>
> a position identifier portion advertising unit for advertising the generated position identifier portion from the port on the position identifier portion," as recited in claim 1. (Emphasis added)

Accordingly, Applicants respectfully submit that claim 1, together with claims 2 and 7 dependent therefrom, is patentable over Ozaki et al. for at least the foregoing reasons.

The Examiner relied upon Miyata et al. as a combining reference to specifically address the additional features recited in dependent claims 3 and 4. And even assuming, arguendo, that it would have been obvious to one skilled in the art at the time the claimed invention was made to combine this additional reference, such a combination would still have failed to cure the above-described deficiencies of Ozaki et al.

Again, Miyata et al. describe,

> "[i]f a random address creation method is selected, then the step 503 of sending Router Solicitation is performed to obtain an IPv6 address prefix 551 from a router in the same subnet. When the router sends Router Advertisement in response to Router Solicitation, a step 505 of receiving Router Advertisement is performed to obtain the address prefix 551," on paragraph [0100], lines 5-11.

That is, the IPv6 address prefix 551 is obtained from a router for generating IPv6 address prefix 551.

And Miyata et al. describe,

> "[s]econd, a step of creation an interface ID 506 is performed at random interface ID creation part 528 to create an IPv6 interface ID 552," on paragraph [0101], lines 1-3.

That is, as a router in the same subnet already knows the IPv6 address prefix 551, the IPv6 address prefix is obtained from the router in the same subnet, which does not generate the IPv6 address prefix.

The interface ID 506 is generated by a random number, but the IPv6 address prefix is not generated by a random number.

The claimed position identifier portion generating unit recited in claim 3 generates a position identifier portion corresponding to the IPv6 address prefix.

Miyata et al. fail to disclose a router for generating IPv6 address prefix 551.

Further, Miyata et al. fail to disclose comparing a random number with all of the position identifier portions registered in the routing table in order to guarantee uniqueness of the random number.

Miyata et al. also fail to disclose generating an IPv6 address prefix 551 that does not match all of IPv6 address prefixes in a routing table by using the routing table.

Accordingly, Applicant respectfully submits that claims 3-4 are patentable over Ozaki et al. and Miyata et al., separately and in combination, for at least the foregoing reasons.

In view of the remarks set forth above, this application is in condition for allowance which action is respectfully requested. However, if for any reason the Examiner should consider this application not to be in condition for allowance, the Examiner is respectfully requested to telephone the undersigned attorney at the number listed below prior to issuing a further Action.

Any fee due with this paper may be charged to Deposit Account No. 50-1290.

Respectfully submitted,

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